**AIRPLANE:**

Orville and Wilbur Wright are credited with inventing the airplane. This wasn't a simple or easy task they had completed. They had worked and experimented for years with gliders perfecting the wing design and controls. They studied how birds flew and used their wings to help design the wings for their gliders and planes. The Flyer was based on the Wrights' experience testing gliders at Kitty Hawk between 1900 and 1902. Their last glider, the 1902 Glider, led directly to the design of the Flyer (airplane). The Wrights built the aircraft in 1903 using giant spruce wood as their construction material. Since they could not find a suitable automobile engine for the task, they commissioned their employee Charlie Taylor to build a new design from scratch, effectively a crude gasoline engine. A sprocket chain drive, borrowing from bicycle technology, powered the twin propellers, which were also made by hand.

As with the gliders, the pilot flew lying on his stomach on the lower wing with his head toward the front of the craft in an effort to reduce friction. He steered by moving a cradle attached to his hips. The cradle pulled wires which warped the wings and turned the rudder simultaneously. There was a lot of technology, know how, and courage involved in making that first flight.

The invention of the airplane was quite a milestone and impacted transportation throughout the world, but the airplane’s effect on society did not happen overnight. In the early 1900s the airplane was more of a curiosity and attraction, rather than a mode of transportation. It took some time to perfect, but in later years people could travel large distances at much less time. Today, trips that previously would have taken months by boat and train can now be traveled by plane in a few hours.

**TELEPHONE:**

Alexander Graham Bell is most famous for his invention of the telephone. He first became interested in the science of sound because both his mother and wife were deaf. His experiments in sound eventually led him to want to send voice signals down a telegraph wire. He was able to get some funding and hire his famous assistant Thomas Watson and together they were able to come up with the telephone. The first words spoken over the telephone were by Bell on March 10, 1876. They were "Mr. Watson, come here, I want to see you".

It turns out that other scientists had similar ideas. Bell had to race to the patent office in order to get his patent in first. He was first and, as a result, Bell and his investors had a valuable patent that would change the world. They formed the Bell Telephone Company in 1877. There have been many mergers and name changes over the years, but this company is known today as AT&T.

**PHONOGRAPH:**

The phonograph, also called the record player or gramophone, is an electronic device that plays recorded sound. It was the most common device for playing recorded music from the 1870s through the 1980s. The invention of the phonograph is credited to Thomas Edison. August 12, 1877 is the date popularly given for Thomas Edison's completion of the model for the first phonograph.

Edison was trying to improve the telegraph transmitter when he noticed that the movement of the paper tape through the machine produced a noise resembling spoken words when played at a high speed. Experimenting with a stylus (hard-pointed instrument like a large needle) on a tinfoil cylinder, Edison spoke into the machine and was able to play his recording back. The phonograph plays sounds from a vinyl record. The record is placed onto the turntable. The turntable spins the record while a lever with a small needle on the bottom scrapes in between the little grooves in the vinyl. When this happens, music is played.

The next time you listen to a favorite album, you can thank Thomas Edison for discovering the secret to recording sound. Before there were CD players and tape decks, there was the phonograph.

**TYPEWRITER**

A typewriter is a mechanical machine for writing characters similar to those produced by printer's movable type. A typewriter operates by means of keys that strike a ribbon to transmit ink or carbon impressions onto paper. Typically, a single character is printed on each key press. The machine prints characters by making ink impressions of type elements similar to the sorts used in movable type letterpress printing.

The first commercial typewriters were introduced in 1874, but did not become common in offices until after the mid-1880s. The first typewriter to be commercially successful was invented in 1868 by Americans Christopher Latham Sholes, Frank Haven Hall, Carlos Glidden and Samuel W. Soule in Milwaukee, Wisconsin, The typewriter quickly became an indispensable tool for practically all writing other than personal handwritten correspondence. It was widely used by professional writers, in offices, and for business correspondence in private homes.

**MOTION PICTURE CAMERA:**

The camera was based on photographic principles discovered by still-photograph pioneers Joseph Nicephone Niepce and Louis Daguerre of France. In 1877, inventor Edward Muybridge developed a primitive form of motion pictures when Leland Stanford, governor of California, invited him to develop photo studies of animals in motion. Muybridge developed an ingenious system for photographing sequential motion, setting up 24 cameras attached to trip wires stretched across a racetrack. As the horse tripped each wire, the shutters snapped. The resulting series of photos could be projected as something resembling a motion picture.

Unlike these earlier cameras, Thomas Edison’s Kinetoscope and Kinetograph used celluloid film, invented by George Eastman in 1889. In February 1893, Edison built a small movie studio that could be rotated to capture the best available sunlight. He showed the first demonstration of his films—featuring three of his workers pretending to be blacksmiths—in May 1893.

Edison's laboratory was responsible for the invention of the Kinetograph (a motion picture camera) and the Kinetoscope (a peep-hole motion picture viewer). Most of this work was performed by Edison's assistant, W. L. K. Dickson, beginning in 1888. Motion pictures became a successful entertainment industry in less than a decade, with single-viewer Kinetoscopes giving way to films projected for mass audiences. The Edison Manufacturing Co. (later known as Thomas A. Edison, Inc.) not only built the apparatus for filming and projecting motion pictures, but also produced films for public consumption. Most early examples were actualities showing famous people, news events, disasters, people at work, new modes of travel and technology, scenic views, expositions, and other leisure activities. As actualities declined in popularity, the company's production emphasis shifted to comedies and dramas.

**LIGHTBULB**

The incandescent light bulb turns electricity into light by sending the electric current through a thin wire called a filament. Filament is made up mostly of tungsten, a type of metal. The resistance of the filament heats the bulb up. Eventually the filament gets so hot that it glows, producing light.

The filament needs to be protected from oxygen in the air, so it is inside the bulb, and the air in the bulb is either removed (a vacuum) or more often, replaced with a gas that doesn't affect anything, like neon or argon. Only about 3% of the energy that goes into an incandescent light bulb actually makes light, the rest makes heat.

This is the type of light bulb that Thomas Edison spent so much time on in the 1870s. He patented his invention in 1879. It was the first light bulb that could be used in houses - it did not cost too much, and it worked well. For the first time, people did not have to burn something (candles, oil lamps, kerosene lamps, etc.) to make light. It was bright enough that people could read easily at night or do work. It was used to light stores and streets, and people could travel around after dark. This started the common use of electricity in homes and businesses.

**RADIO**

Radio is a way to send electromagnetic signals over a long distance, to deliver information from one place to another. A machine that sends radio signals is called a transmitter, while a machine that "picks up" the signals is called a receiver. A machine that does both jobs is a "transceiver". When radio signals are sent out to many receivers at the same time, it is called a broadcast. Sound can be sent by radio, sometimes through Frequency Modulation (FM) or Amplitude Modulation (AM).

Many people worked to make radio possible. After James Clerk Maxwell predicted them, Heinrich Rudolf Hertz in Germany first showed that radio waves exist. Guglielmo Marconi in Italy made radio into a practical tool of telegraphy in the late 1800s, used mainly by ships at sea. He is sometimes said to have invented radio. In America, immigrant Nicola Tesla is credited with making radio a usable source of communication,

 Later inventors learned to transmit voices, which led to broadcasting of news, music and entertainment. In the 1920s, the majority of Americans received their news and home entertainment via the radio.

**AUTOMOBILE**

The earliest automobiles recorded were actually steam engines attached to wagons in the late 18th century. The steam engines were heavy and therefore the wagon was slow and hard to control.

The internal combustion engine changed the way automobiles were powered. The engine used either gasoline, diesel, or kerosene to work. When the gas is exploded in a cylinder it pushes the piston down and turns the wheel.

Although many people tried to make a good car that would work well and sell well, people say that Karl Benz invented the modern automobile. He used a four-stroke type of internal combustion engine to power his Benz Patent-Motorwagen. In 1886. He began to make many cars in a factory and sell them in Germany in 1888.

In North America, the first modern car was made by the Duryea Brothers in Springfield, Massachusetts. Benz may have invented the first modern car, and Duryea the first car to sell, but Henry Ford sold the most cars to the most people. In 1910 he began making and selling his Model T, which was a huge success. Many people could afford this car, not just the rich, because Ford used mass production. This meant he made a great many Model Ts in a short time in a factory. People say that the Model T is the car that "put America on wheels". The Model T was the most popular car of the time because it was cheap but it was still a good quality car that ordinary people could own.

Since then, many different kinds of cars have been designed and built, from minivans to sports cars.In the 1950s the United States made and used more cars than all the rest of the world. The world caught up, and fifty years later China became the largest maker and user.